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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,459	10/22/2003	Ajay R. Bam	MODI-0001-U01	7339

87084 7590 03/30/2012

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EXAMINER	
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ART UNIT	PAPER NUMBER
3682	

NOTIFICATION DATE	DELIVERY MODE
03/30/2012	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte AJAY R. BAM,
ROBERT J. WESLEY,
WALTER STOCK, and
TROY CHEN

Appeal 2010-006560
Application 10/691,459
Technology Center 3600

Before HUBERT C. LORIN, ANTON W. FETTING, and
JOSEPH A. FISCHETTI, *Administrative Patent Judges*.

LORIN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Ajay R. Bam, et al. (Appellants) seek our review under 35 U.S.C. § 134 of the final rejection of claims 1-5, 7-14, 16-22, 26-41, 44-50, 52-63, 65-73. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We AFFIRM but denominate our affirmance of the rejection of claims 1-5, 7-14, 16-22, 26-41, 44-50, 52-54, 61-63, and 65-73 as a new grounds of rejection .[1]

THE INVENTION

Claim 1, reproduced below, is illustrative of the subject matter on appeal.

1. A method for distributing a promotion, said method comprising:

generating said promotion for use by a specific consumer;

wirelessly transmitting data relating to said promotion to a mobile electronic device of said specific consumer; and

wirelessly applying said promotion to a purchase using said mobile electronic device.

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[1] Our decision will make reference to the Appellants' Appeal Brief ("App. Br.," filed Oct. 30, 2009) and Reply Brief ("Reply Br.," filed Feb. 23, 2010), and the Examiner's Answer ("Answer," mailed Dec. 23, 2009).

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Narasimhan US 6,237,145 B1 May 22, 2001

Official Notice evidenced by Aggarwal (US 7,013,286 B1, iss. Mar. 14, 2006), Freeman (US 6,450,407 B1, iss. Sep. 17, 2002), and Kolls (US 6,601,040 B1, iss. Jul. 29, 2003).

The following rejection is before us for review:

1. Claims 1-5, 7-14, 16-22, 26-41, 44-50, 52-63, and 65-73 are rejected under 35 U.S.C. §103(a) as being unpatentable over Narasimhan and Official Notice (as evidenced by Aggarwal, Freeman, and Kolls).

ISSUES

Would it have been obvious to one of ordinary skill in the art to wirelessly transmit and apply data with a wireless mobile device as claimed?

FINDINGS OF FACT

We find that the following enumerated findings of fact (FF) are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

The scope and content of the prior art

1. Narasimhan discloses a smart card without a wireless capability.
2. The Examiner relies on Official Notice that smart cards with wireless capability were known in the prior art at the time of the invention.

Answer 5-22.

3. Wireless mobile electronic devices per se to which information can be wirelessly transmitted were known at the time of the invention as exemplified by:
    a. Kolls; and,
    b. ISO/IEC 14443-2 "Identification cards – contactless integrated circuit(s) cards – Proximity cards – Part 2: Radio frequency power and signal interface;" Mar. 26, 1999 (attached hereto).
4. "Promotions," as claimed, are a type of information which can best be characterized as nonfunctional descriptive material.[2]

Any differences between the claimed subject matter and the prior art

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[2] Patentable weight need not be given to descriptive material absent a new and unobvious functional relationship between the descriptive material and the substrate. *See In re Lowry*, 32 F.3d 1579, 1582-83 (Fed. Cir. 1994); *In re Ngai,* 367 F.3d 1336, 1338 (Fed. Cir. 2004). In that regard, the Appellants have not come forward with evidence sufficient to show that the structure of the claimed mobile electronic device is functionally affected by transmitting and applying promotions. Absent such evidence, it is reasonable to conclude that the claim limitations involving promotions are descriptive and not functionally related to any structure of the claimed system and as such falls under the category of patentably inconsequential subject matter. *See Ex parte Curry*, 84 USPQ2d 1272, 1275 (BPAI 2005) (informative). *See also Ex parte Mathias*, 84 USPQ2d 1276, 1279 (BPAI 2005) (informative). Nonfunctional descriptive material cannot render nonobvious an invention that would have otherwise been obvious. *In re Ngai*, 367 F.3d at 1339. *Cf. In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983) (when descriptive material is not functionally related to the substrate, the descriptive material will not distinguish the invention from the prior art in terms of patentability).

5. The difference between the claimed subject matter and the prior art is that the claimed subject matter involves "promotions."

The level of skill in the art

6. Neither the Examiner nor the Appellants have addressed the level of ordinary skill in the pertinent art of wireless mobile devices. We will therefore consider the cited prior art as representative of the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) ("[T]he absence of specific findings on the level of skill in the art does not give rise to reversible error 'where the prior art itself reflects an appropriate level and a need for testimony is not shown'") (*quoting Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

Secondary considerations

7. There is no evidence on record of secondary considerations of non-obviousness for our consideration.

ANALYSIS

But for independent claim 55, all the other independent claims appear to require, at a minimum, a step of wirelessly transmitting information to and/or from a mobile electronic device (method claims 1, 13, 22, 26, 30, 37, 49, and 70), a mobile electronic device operable for wirelessly transmitting information (claim 41), or a means to communicate information to and/or from a wireless mobile electronic device (claims 61 and 66).

Narasimhan discloses a smart card without a wireless capability. FF 1. Accordingly, in order to reach the claimed subject matter, one would have to

modify Narasimhan's smart card to provide it with that capability. In that regard, the Examiner relies on Official Notice that such a wireless capability was known in the prior art at the time of the invention. FF 2.

There can be no dispute that wireless devices were known in 2002 (the year to which this application claims benefit). We agree with the Examiner's finding (Answer 6) that wireless mobile electronic devices per se to which information can be wirelessly transmitted were known at the time of the invention. FF 3a. and b.

The question the Appellants pose is whether it would have been obvious to one of ordinary skill in the art to modify Narasimhan's smart card so as to provide it with the necessary wireless capability such that it can operate to perform in the manner claimed. App. Br. 18.

But, notwithstanding that Narasimhan does not describe a smart card with wireless capability, such devices were well known at the time of the invention. FF 3a. and b. Given this, it follows that transmitting information, be it coupons or any other nonfunctional descriptive material, to and from such a device was also known. In our view, given these conventional wireless cards, it would have been obvious to those of ordinary skill in the art at the time of the invention to perform the steps as broadly claimed; that is, to wirelessly transmit information to the wireless card and wirelessly apply information using the wireless card.

For the foregoing reasons, we affirm the obviousness rejection of claims 1-5, 7-14, 16-22, 26-41, 44-50, 52-54, 61-63, and 65-73. We recognize however that our reasoning departs from that of the Examiner. Accordingly, we denominate the affirmance as a new grounds of rejection.

The above reasoning does not apply to claims 55-60. The Appellants argued claims 55-60 as a group (App. Br. 43-48). We select claim 55 as the representative claim for this group, and the remaining claims 56-60 stand or fall with claim 55. 37 C.F.R. § 41.37(c)(1)(vii) (2007). Claim 55 is drawn to a mobile electronic device but, unlike claims 1-5, 7-14, 16-22, 26-41, 44-50, 52-54, 61-63, and 65-73, is limited to having a wireless capability.

The Appellants challenge the rejection of claim 55 for the same reasons used to challenge the rejection of the other claims – namely, "Applicant maintains that the smart card of *Narasimhan* is not capable of wirelessly transmitting or receiving data through a network ..." (App. Br, 43). Since the claimed device is not so limited, the argument is not persuasive as to error in the rejection as it is not commensurate in scope with what is claimed.

The Appellants also argue that Narasimhan's smart card "does not receive data regarding a promotion from a remote server; rather, the smart card receives a coupon from the user's personal computer." App. Br. 43. We do not find this argument persuasive. The mere existence of differences between the prior art and the claim does not establish nonobviousness. *Dann v. Johnston*, 425 U.S. 219, 230 (1976). The issue is "whether the difference between the prior art and the subject matter in question 'is a differen[ce] sufficient to render the claimed subject matter unobvious to one skilled in the applicable art.'" *Dann*, 425 U.S. at 228. Those of ordinary skill in the art at the time of the invention knew to receive data from a remote server. It would have been obvious to those of ordinary skill in the art to substitute a remote server for the user's computer in Narasimhan as the means by which

Narasimhan's smart card receives information. "[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *KSR* at 416. In that regard, insufficient evidence of unexpected results for using a remote server has been submitted.

No persuasive arguments as to error in the rejection having been made and no evidence of secondary considerations of nonobviousness having been submitted, we affirm the rejection under §103 of claims 55-60 over Narasimhan and Official Notice.

DECISION

The rejection of claims 1-5, 7-14, 16-22, 26-41, 44-50, 52-54, 61-63, 65-73 under 35 U.S.C. §103(a) as being unpatentable over Narasimhan and Official Notice is affirmed but denominated as a new grounds of rejection.

The rejection of claims 55-60 under 35 U.S.C. §103(a) as being unpatentable over Narasimhan and Official Notice is affirmed.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)). 37 C.F.R. § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that the Appellants, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise

one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> • (1) Reopen prosecution. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner . . . .
>
> • (2) Request rehearing. Request that the proceeding be reheard under § 41.52 by the Board upon the same record . . . .

AFFIRMED; 37 C.F.R. § 41.50(b)

mls

Date: 1999-03-26

Reference number of document: **ISO/IEC FCD 14443-2**

Committee identification: ISO/IEC JTC1/SC17/WG8

Editor: D.Baddeley, Motorola.
E-mail: tte001@email.sps.mot.com

Final Committee Draft

ISO/IEC 14443-2

Identification cards – Contactless integrated circuit(s) cards – Proximity cards –

Part 2: Radio frequency power and signal interface

Cartes d'identification — Cartes à circuit(s) intégrés sans contacts — Cartes de Proximité — Partie 2:

Document type: International Standard
Document stage: Final Committee Draft
Document language: E

Contents

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organizations to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 14443-2 was prepared by Joint Technical Committee ISO/IEC/JTC1/SC17, Information technology, Subcommittee SC 17, *Identification cards and related devices.*

ISO/IEC 14443 consists of the following parts, under the general title *Identification cards - Contactless integrated circuit(s) cards - Proximity cards:*

- *Part 1: Physical characteristics*
- *Part 2: Radio frequency power and signal interface*
- *Part 3: Initialization and anticollision*
- *Part 4: Transmission protocols*

The Annexe A of this part of ISO/IEC 14443 is for information only.

Introduction

ISO/IEC 14443 is one of a series of International Standards describing the parameters for identification cards as defined in ISO/IEC 7810 and the use of such cards for international interchange.

This part of ISO/IEC 14443 describes the electrical characteristics of two types of contactless interface between a proximity card and a proximity coupling device. The interface includes power and bi-directional communication.

This part of ISO/IEC 14443 does not preclude the incorporation of other standard technologies on the card, such as those referenced in the Bibliography.

Contactless Card Standards cover a variety of types as embodied in ISO/IEC 10536 (Close coupled cards), ISO/IEC 14443 (Proximity cards), ISO/IEC 15693 (Vicinity cards). These are intended for operation when very near, nearby and at a longer distance from associated coupling devices respectively.

Identification Cards - Contactless integrated circuit(s) cards - Proximity cards

Part 2:

Radio frequency power and signal interface

1 Scope

This part of ISO/IEC 14443 specifies the nature and characteristics of the fields to be provided for power and bi-directional communication between proximity coupling devices (PCDs) and proximity cards (PICCs).

This part of ISO/IEC 14443 shall be used in conjunction with other parts of ISO/IEC 14443.

This part of ISO/IEC 14443 does not specify the means of generating coupling fields, nor the means of compliance with electromagnetic radiation and human exposure regulations which can vary according to country.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 14443. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 14443 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 14443, *Identification cards - Contactless integrated circuit(s) cards - Proximity cards*

ISO/IEC 10373, *Identification cards - Test methods*

ISO/IEC 7816-2, *Identification cards - Integrated circuit(s) cards with contacts - Part2: Dimensions and location of the contacts*

3 Terms and definitions

For the purposes of this International Standard, the definitions given in ISO/IEC 14443-1 and the following definitions apply:

3.1
Bit duration
Time during which a logical state is defined, at the end of which a new bit starts.

3.2
Binary phase shift keying
Phase shift keying where the phase shift is 180°, resulting in two phase state possibilities.

3.3
Modulation Index
Defined as [a-b]/[a+b] where a and b are the peak and minimum signal amplitude respectively.

3.4
NRZ-L
Method of bit coding whereby a logical state during a bit duration is represented by one of two defined physical states of a communication medium.

3.5
Subcarrier
RF signal produced by modulation of a carrier frequency fc with a frequency fs.

4 Abbreviations and Symbols

ASK	Amplitude shift keying
BPSK	Binary phase shift keying
NRZ-L	Non-return to zero, (L for level)
PCD	Proximity coupling device
PICC	Proximity card
RF	Radio frequency
fc	Frequency of operating field (carrier frequency)
fs	Frequency of subcarrier modulation

5 Initial dialogue for proximity cards

The initial dialogue between the PCD and the PICC shall be conducted through the following consecutive operations:

- activation of the PICC by the RF operating field of the PCD
- PICC waits silently for a command from PCD
- transmission of a command by PCD
- transmission of a response by PICC

These operations use the RF power and signal interface specified in the following clauses.

6 Power transfer

The PCD shall produce an energizing RF field which couples to the PICC to transfer power and which shall be modulated for communication.

6.1 Frequency

The frequency (fc) of the RF operating field shall be 13,56 MHz ± 7 kHz.

6.2 Operating field

The minimum unmodulated operating field shall be Hmin and has a value of 1,5 A/m (rms).
The maximum unmodulated operating field shall be Hmax and has a value of 7,5 A/m (rms).
A PICC shall operate as intended continuously between Hmin and Hmax.

A PCD shall generate a field of at least Hmin and not exceeding Hmax at manufacturer specified positions (operating volume).

In addition the PCD shall be capable of powering any single reference PICC (defined in the test methods) at manufacturer specified positions (operating volume).

The PCD shall not generate a field higher than the value specified in ISO/IEC 14443-1 (Alternating magnetic field) in any possible PICC position.

Test methods for the PCD operating field are defined in ISO/IEC 10373.

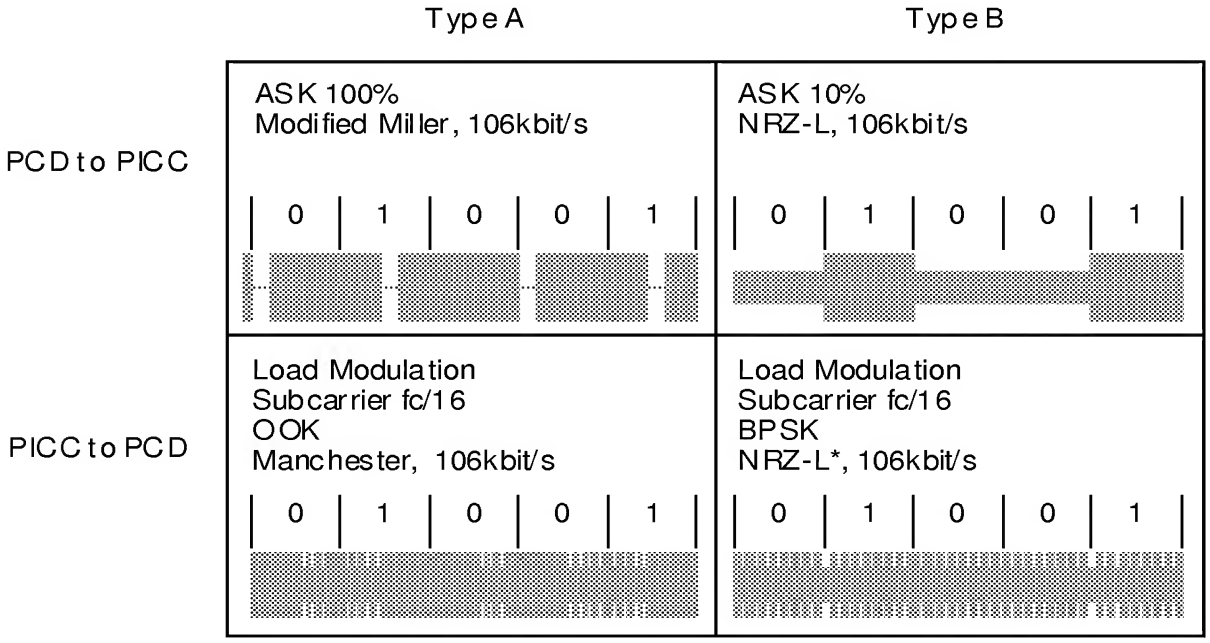
7 Signal interface

Two communication signal interfaces, Type A and Type B, are described in the following clauses.

The PCD shall alternate between modulation methods when idling before detecting the presence of a PICC of Type A or Type B.

Only one communication signal interface may be active during a communication session until deactivation by the PCD or removal of the PICC. Subsequent session(s) may then proceed using either modulation method.

Figure 1 is an illustration of the concepts described in the following clauses.



* Inversion of data is also possible

Figure 1 –- Example communication signals for Type A and Type B interfaces

8 Communication signal interface Type A

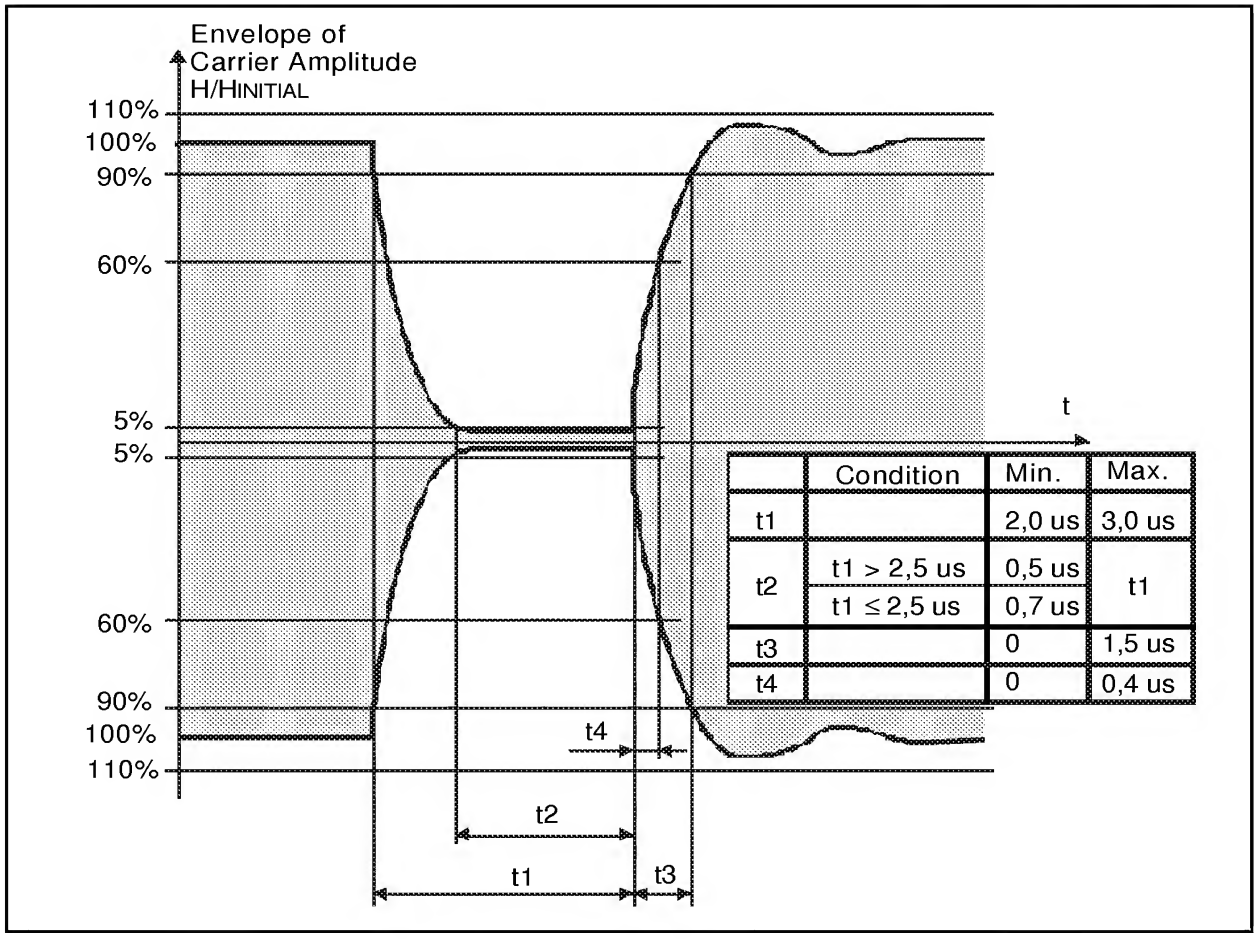
8.1 Communication PCD to PICC

8.1.1 Data rate

The data bit rate for the transmission during initialization and anticollision shall be fc/128 (~ 106 kbit/s).

8.1.2 Modulation

Communication between PCD and PICC takes place using the modulation principle of ASK100% of the RF operating field to create a "pause" as shown in Figure 2.



	Condition	Min.	Max.
t1		2,0 us	3,0 us
t2	t1 > 2,5 us	0,5 us	t1
	t1 ≤ 2,5 us	0,7 us	
t3		0	1,5 us
t4		0	0,4 us

Figure 2 -– Pause

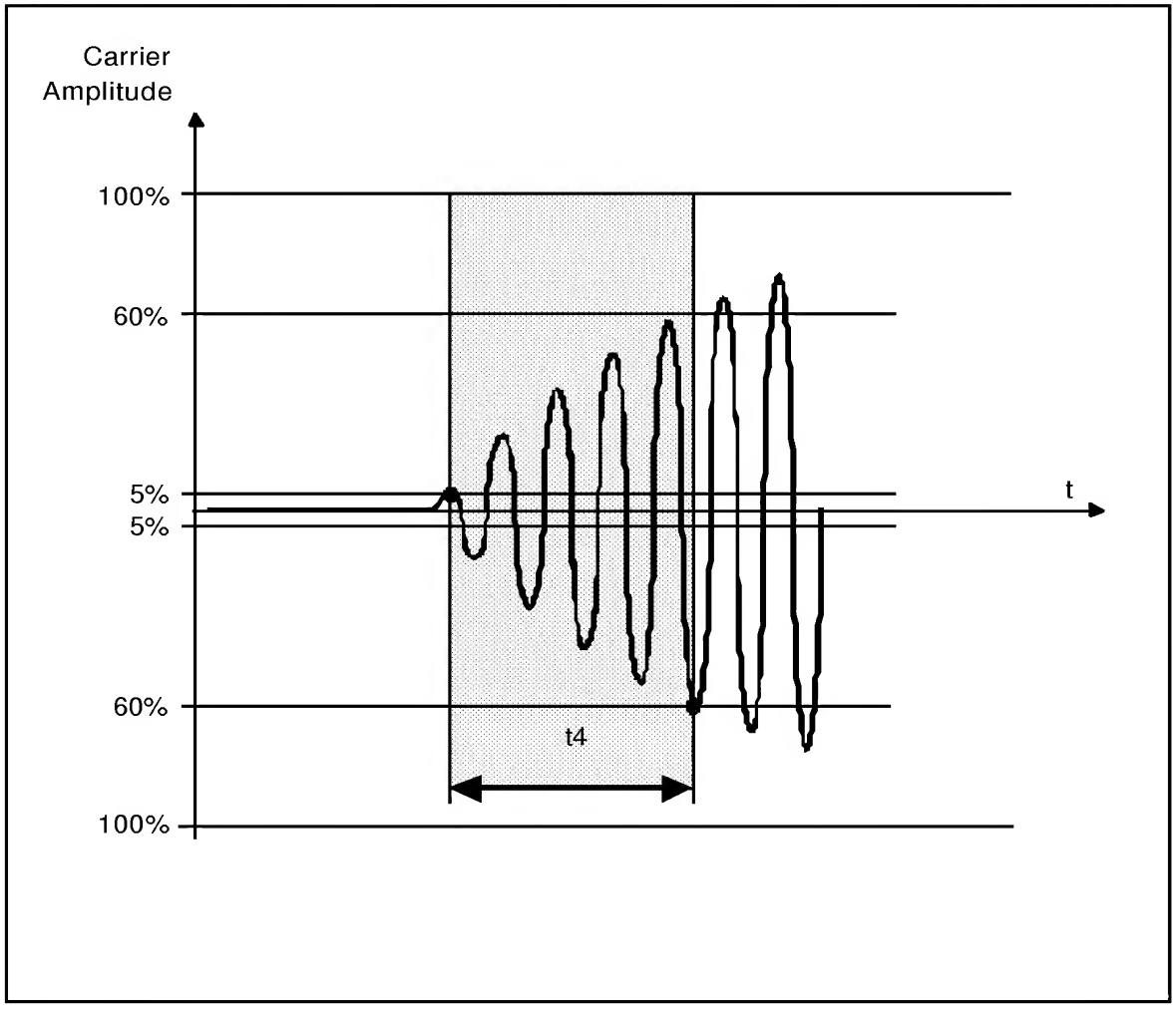
The envelope of the PCD field shall decrease monotonically to less than 5% of its initial value $H_{INITIAL}$ and remain less than 5% for more than t2. This envelope shall comply to Figure 2.

If the envelope of the PCD field does not decrease monotonically, the time between a local maximum and the time of passing the same value before the local maximum shall not exceed 0,5 µs. This shall only apply if the local maximum is greater than 5% of $H_{INITIAL}$.

Overshoots shall remain within 90% and 110% of $H_{INITIAL}$.

The PICC shall detect the "End of Pause" after the field exceeds 5% of $H_{INITIAL}$ and before it exceeds 60% of $H_{INITIAL}$.

Note: In systems designed to handle only one card at a time, t4 need not be respected.



Note: This definition applies to all modulation envelope timings.

Figure 3 –– Definition of End of Pause

8.1.3 Bit representation and coding

The following sequences are defined:

sequence X	after a time of 64/fc a "pause" shall occur
sequence Y	for the full bit duration (128/fc) no modulation shall occur
sequence Z	at the beginning of the bit duration a "pause" shall occur

The above sequences are used to code the following information :

logic "1"	sequence X
logic "0"	sequence Y with the following two exceptions: i) If there are two or more contiguous "0"s, sequence Z shall be used from the second "0" on ii) If the first bit after a "start of frame" is "0" , sequence Z shall be used to represent this and any "0"s which follow directly thereafter
Start of communication	sequence Z
End of communication	logic "0" followed by sequence Y
No information	at least two sequences Y

8.2 Communication PICC to PCD

8.2.1 Data rate

The data bit rate for the transmission during initialization and anticollision shall be fc/128 (~ 106 kbit/s).

8.2.2 Load modulation

The PICC shall be capable of communication to the PCD via an inductive coupling area where the carrier frequency is loaded to generate a subcarrier with frequency fs. The subcarrier shall be generated by switching a load in the PICC.

The load modulation amplitude shall be at least $30/H^{1.2}$ mV (peak) when measured as described in the test methods, where H is the (rms) value of magnetic field strength in A/m.

Test methods for PICC load modulation are defined in international standard ISO/IEC 10373.

8.2.3 Subcarrier

The frequency fs of the subcarrier shall be fc/16 (~847 kHz). Consequently, during initialization and anticollision, one bit duration is equivalent to 8 periods of the subcarrier.

8.2.4 Subcarrier modulation

Every bit period starts with a defined phase relation to the subcarrier. The bit period starts with the loaded state of the subcarrier.

The subcarrier shall be modulated using on/off keying with the sequences defined in 8.2.5.

8.2.5 Bit representation and coding

Bit coding shall be Manchester with the following definitions:

sequence D	the carrier shall be modulated with the subcarrier for the first half (50%) of the bit duration
sequence E	the carrier shall be modulated with the subcarrier for the second half (50%) of the bit duration
sequence F	the carrier is not modulated with the subcarrier for one bit duration
logical “1”	sequence D
logical “0”	sequence E
Start of communication	sequence D
End of communication	sequence F
No information	no subcarrier

9 Communication signal interface Type B

9.1 Communication PCD to PICC

9.1.1 Data rate

The data bit rate for the transmission during initialization and anticollision shall be nominally fc/128 (~106 kbit/s). Tolerance and bit boundaries are defined in ISO/IEC 14443-3.

9.1.2 Modulation

Communication between PCD and PICC takes place via ASK 10% amplitude modulation of the RF operating field.

The modulation index shall be a minimum of 8 % and a maximum of 14 %.

The modulation waveform shall comply to Figure 4. The rising and falling edges of the modulation shall be monotonic.

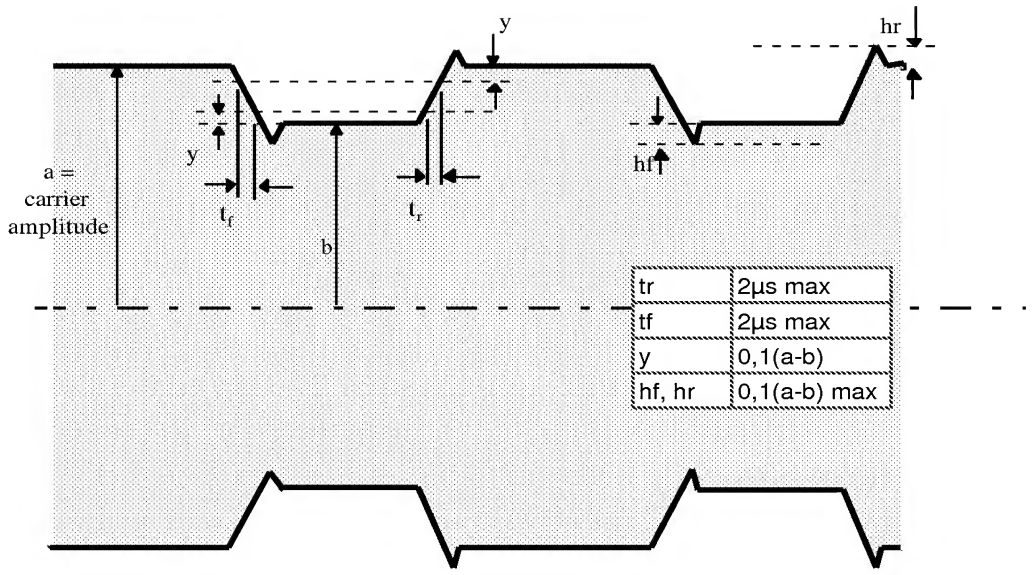


Figure 4 -– Type B modulation waveform

9.1.3 Bit representation and coding

Bit coding format shall be NRZ-L with logic levels defined as follows:

logic "1" carrier high field amplitude (no modulation applied).

logic "0" carrier low field amplitude.

9.2 Communication PICC to PCD

9.2.1 Data rate

The data bit rate for the transmission during initialization and anticollision shall be nominally fc/128 (~106 kbit/s).

9.2.2 Load modulation

The PICC shall be capable of communication to the PCD via an inductive coupling area where the energizing field is loaded to generate a subcarrier with frequency fs. The subcarrier shall be generated by switching a load in the PICC.

The load modulation amplitude shall be at least $30/H^{1.2}$ mV (peak) when measured as described in the test methods, where H is the (rms) value of magnetic field strength in A/m.

Test methods for PICC load modulation are defined in international standard ISO/IEC 10373.

9.2.3 Subcarrier

The frequency fs of the subcarrier shall be fc/16 (~847 kHz). Consequently, during initialization and anticollision, one bit duration is equivalent to 8 periods of the subcarrier.

The PICC shall generate a subcarrier only when data is to be transmitted.

9.2.4 Subcarrier modulation

The subcarrier shall be BPSK modulated as described in 9.2.5. Phase shifts shall only occur at nominal positions of rising or falling edges of the subcarrier.

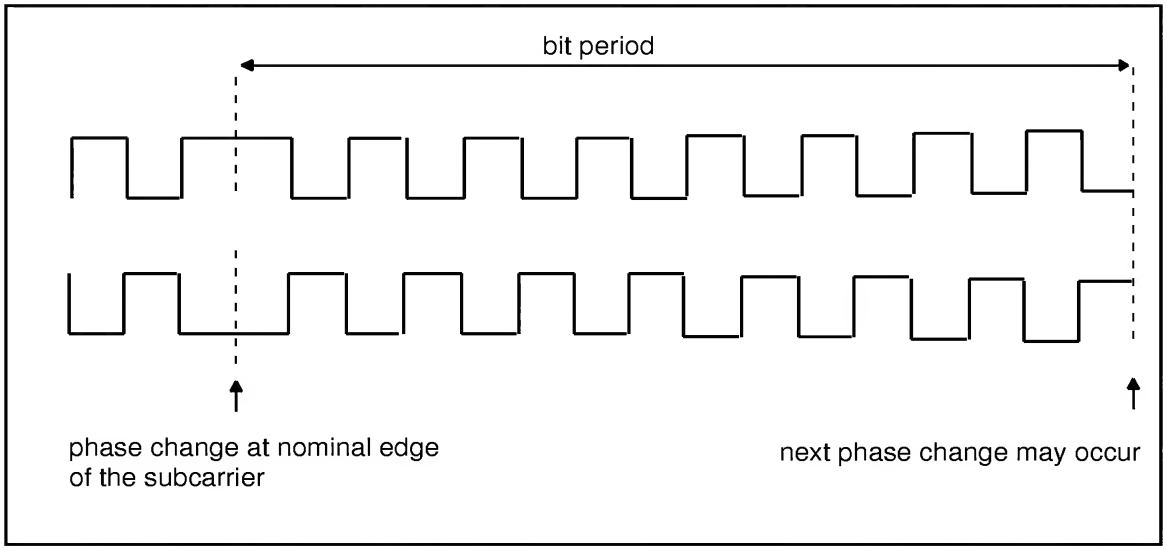


Figure 5 –– Allowed phase shifts (PICC internal subcarrier load switching)

9.2.5 Bit representation and coding

Bit coding shall be NRZ-L where a change of logic state shall be denoted by a phase shift (180°) of the subcarrier.

The initial logic level for NRZ-L at the start of a PICC frame shall be established by the following sequence:

After any command from the PCD a guard time TR0 shall apply in which the PICC shall not generate a subcarrier. TR0 shall be greater than 64/fs.

The PICC shall then generate a subcarrier with no phase transition before a delay TR1 establishing a subcarrier phase reference $\varnothing_0$. TR1 shall be greater than 80/fs.

This initial phase state $\varnothing_0$of the subcarrier shall be defined as logical "1" so that the first phase transition represents a change from logical "1" to logical "0".

Subsequently the logic state shall be defined according to the subcarrier phase reference:

$\varnothing_0$	logic state 1
$\varnothing_0$ + 180°	logic state 0

10 PICC minimal coupling zone

The PICC coupling antenna may have any form and location but shall encircle the zone shown in Figure 6.

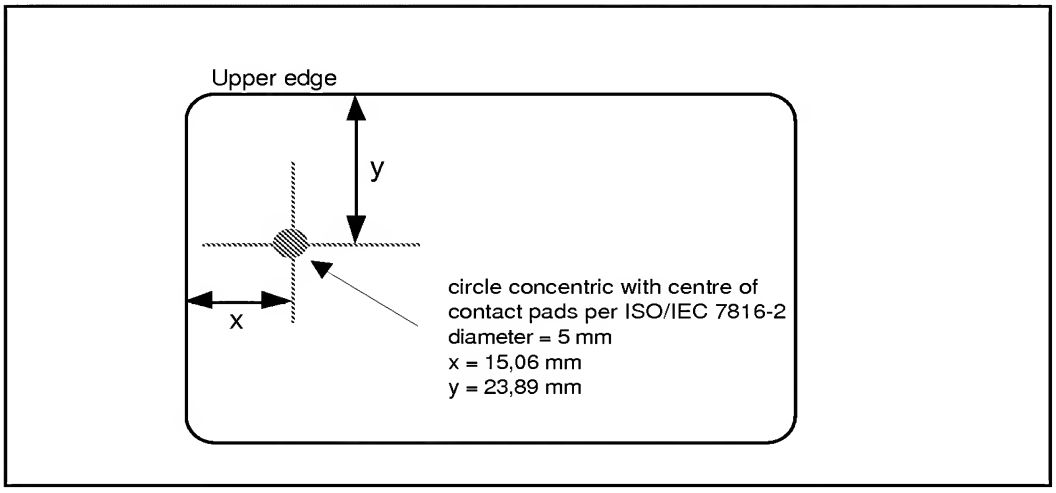


Figure 6 -– PICC minimal coupling zone

Annex A
(informative)

Compatibility with other Card Standards

This standard does not preclude the addition of other existing card standards on the PICC, such as those listed as follows:

ISO/IEC 7811, Identification cards - Recording technique -

ISO/IEC 7812, Identification cards - Identification of issuers.

ISO/IEC 7813, Identification cards - Financial transaction cards.

ISO/IEC 7816, Identification cards - Integrated circuit(s) cards with contacts.

ISO/IEC 10536, Identification cards - Contactless integrated circuit(s) cards close-coupled cards.

ISO/IEC 15693, Identification cards - Contactless integrated circuit(s) cards Vicinity cards.